No. 200300054

THE UNITED STATES OF AMERICA

TO ALL TO WHOM THESE PRESENTS SHALL COME:

Progeny Advanced Genetics, Inc.

Whereas, THERE HAS BEEN PRESENTED TO THE

Secretary of Agriculture

AN APPLICATION REQUESTING A CERTIFICATE OF PROTECTION FOR AN ALLEGED DISTINCT VARIETY OF SEXUALLY REPRODUCED, OR TUBER PROPAGATED PLANT, THE NAME AND DESCRIPTION OF WHICH ARE CONTAINED IN THE APPLICATION AND EXHIBITS, A COPY OF WHICH IS HEREUNTO ANNEXED AND MADE A PART HEREOF, AND THE VARIOUS REQUIREMENTS OF LAW IN SUCH CASES MADE AND PROVIDED HAVE BEEN COMPLIED WITH, AND THE TITLE THERETO IS, FROM THE RECORDS OF THE PLANT VARIETY PROTECTION OFFICE, IN THE APPLICANT(S) INDICATED IN THE SAID COPY, AND WHEREAS, UPON DUE EXAMINATION MADE, THE SAID APPLICANT(S) IS (ARE) ADJUDGED TO BE ENTITLED TO A CERTIFICATE OF PLANT VARIETY PROTECTION UNDER THE LAW.

NOW, THEREFORE, THIS CERTIFICATE OF PLANT VARIETY PROTECTION IS TO GRANT UNTO THE SAID APPLICANT(S) AND THE SUCCESSORS, HEIRS OR ASSIGNS OF THE SAID APPLICANT(S) FOR THE TERM OF TWENTY YEARS FROM THE DATE OF THIS GRANT, SUBJECT TO THE PAYMENT OF THE REQUIRED FEES AND PERIODIC REPLENISHMENT OF VIABLE BASIC SEED OF THE VARIETY IN A PUBLIC REPOSITORY AS PROVIDED BY LAW, THE RIGHT TO EXCLUDE OTHERS FROM SELLING THE VARIETY, OR OFFERING IT FOR SALE, OR REPRODUCING IT, OR IMPORTING IT, OR EXPORTING IT, OR CONDITIONING IT FOR PROPAGATION, OR STOCKING IT FOR ANY OF THE ABOVE PURPOSE , OR CONDITIONING IT FOR PROPAGATION, OR STOCKING IT FOR ANY OF THE ABOVE PURPOSE, OR USING IT IN PRODUCING A HYBRID OR DIFFERENT VARIETY THEREFROM, TO THE EXTENT PROVIDED BY THE PLANT VARIETY PROTECTION ACT. (84 STAT. 1542, AS AMENDED, 7 U.S.C. 2321 ET SEQ.)

LETTUCE

'Cyclone'

In Testimony Whereof, *I have hereunto set my hand and caused the seal of the Plant Variety Protection Office to be affixed at the City of Washington, D.C. this fourteenth day of February, in the year two thousand and six.*

Attest:

Commissioner
Plant Variety Protection Office
Agricultural Marketing Service

Secretary of Agriculture

REPRODUCE LOCALLY. *Include form number and date on all reproductions*

Form Approved - OMB No. 0581-0055

U.S. DEPARTMENT OF AGRICULTURE
AGRICULTURAL MARKETING SERVICE
SCIENCE AND TECHNOLOGY - PLANT VARIETY PROTECTION OFFICE

APPLICATION FOR PLANT VARIETY PROTECTION CERTIFICATE

(Instructions and information collection burden statement on reverse)

The following statements are made in accordance with the Privacy Act of 1974 (5 U.S.C. 552a) and the Paperwork Reduction Act (PRA) of 1995.

Application is required in order to determine if a plant variety protection certificate is to be issued (7 U.S.C. 2421). Information is held confidential until certificate is issued (7 U.S.C. 2426).

1. NAME OF OWNER
PROGENY ADVANCED GENETICS, INC.

2. TEMPORARY DESIGNATION OR EXPERIMENTAL NAME
PX 408

3. VARIETY NAME
CYCLONE

4. ADDRESS *(Street and No., or R.F.D. No., City, State, and ZIP Code, and Country)*
1536 B MOFFETT ST
SALINAS CA 93905-3342

5. TELEPHONE *(Include area code)*
831-751-6030

6. FAX *(Include area code)*
831-751-6032

FOR OFFICIAL USE ONLY

PVPO NUMBER
20030005

FILING DATE
12/9/2002

7. IF THE OWNER NAMED IS NOT A "PERSON", GIVE FORM OF ORGANIZATION *(corporation, partnership, association, etc.)*
CORPORATION

8. IF INCORPORATED, GIVE STATE OF INCORPORATION
CALIFORNIA

9. DATE OF INCORPORATION
12/26/94

10. NAME AND ADDRESS OF OWNER REPRESENTATIVE(S) TO SERVE IN THIS APPLICATION. *(First person listed will receive all papers)*
DARRYN GIBSON
MANAGER OF RESEARCH AND DEVELOPMENT
PROGENY ADVANCED GENETICS, INC
1536 B MOFFETT ST
SALINAS CALIFORNIA 93905

FEES RECEIVED

FILING AND EXAMINATION FEES:
$ 2705.00
DATE 12/9/2002

CERTIFICATION FEE:
$ 682.00
DATE 11/3/2005

11. TELEPHONE *(Include area code)*
831-751-6030

12. FAX *(Include area code)*
831-751-6032

13. E-MAIL
DMAN@IPROGENY.COM

14. CROP KIND *(Common Name)*
LETTUCE

15. GENUS AND SPECIES NAME OF CROP
LACTUCA SATIVA

16. FAMILY NAME *(Botanical)*
COMPOSITAE

17. IS THE VARIETY A FIRST GENERATION HYBRID?
☐ YES ☒ NO

18. CHECK APPROPRIATE BOX FOR EACH ATTACHMENT SUBMITTED (Follow instructions on reverse)

a. ☒ Exhibit A. Origin and Breeding History of the Variety
b. ☒ Exhibit B. Statement of Distinctness
c. ☒ Exhibit C. Objective Description of Variety
d. ☒ Exhibit D. Additional Description of the Variety *(Optional)*
e. ☒ Exhibit E. Statement of the Basis of the Owner's Ownership
f. ☒ Voucher Sample *(2,500 viable untreated seeds or, for tuber propagated varieties, verification that tissue culture will be deposited and maintained in an approved public repository)*
g. ☒ Filing and Examination Fee ($2,705), made payable to "Treasurer of the United States" *(Mail to the Plant Variety Protection Office)*

19. DOES THE OWNER SPECIFY THAT SEED OF THIS VARIETY BE SOLD AS A CLASS OF CERTIFIED SEED? *See Section 83(a) of the Plant Variety Protection Act)*
☐ YES *(If "yes", answer items 20 and 21 below)* ☒ NO *(If "no", go to item 22)*

20. DOES THE OWNER SPECIFY THAT SEED OF THIS VARIETY BE LIMITED AS TO NUMBER OF CLASSES? ☐ YES ☒ NO
IF YES, WHICH CLASSES? ☐ FOUNDATION ☐ REGISTERED ☐ CERTIFIED

21. DOES THE OWNER SPECIFY THAT SEED OF THIS VARIETY BE LIMITED AS TO NUMBER OF GENERATIONS? ☐ YES ☒ NO
IF YES, SPECIFY THE NUMBER 1,2,3, *etc.* ☐ FOUNDATION ☐ REGISTERED ☐ CERTIFIED
(If additional explanation is necessary, please use the space indicated on the reverse.)

22. HAS THE VARIETY (INCLUDING ANY HARVESTED MATERIAL) OR A HYBRID PRODUCED FROM THIS VARIETY BEEN SOLD, DISPOSED OF, TRANSFERRED, OR USED IN THE U. S. OR OTHER COUNTRIES?
☒ YES 12/31/01, U.S.A ☐ NO
IF YES, YOU MUST PROVIDE THE DATE OF FIRST SALE, DISPOSITION, TRANSFER, OR USE FOR EACH COUNTRY AND THE CIRCUMSTANCES. *(Please use space indicated on reverse.)*

23. IS THE VARIETY OR ANY COMPONENT OF THE VARIETY PROTECTED BY INTELLECTUAL PROPERTY RIGHT *(PLANT BREEDER'S RIGHT OR PATENT)*?
☒ YES PLEASE SEE ATTACHED ☐ NO
IF YES, PLEASE GIVE COUNTRY, DATE OF FILING OR ISSUANCE AND ASSIGNED REFERENCE NUMBER. *(Please use space indicated on reverse.)*

24. The owners declare that a viable sample of basic seed of the variety will be furnished with application and will be replenished upon request in accordance with such regulations as may be applicable, or for a tuber propagated variety a tissue culture will be deposited in a public repository and maintained for the duration of the certificate.

The undersigned owner(s) is(are) the owner of this sexually reproduced or tuber propagated plant variety, and believe(s) that the variety is new, distinct, uniform, and stable as required in Section 42, and is entitled to protection under the provisions of Section 42 of the Plant Variety Protection Act.

Owner(s) is(are) informed that false representation herein can jeopardize protection and result in penalties.

SIGNATURE OF OWNER

NAME *(Please print or type)*
DARRYN GIBSON

CAPACITY OR TITLE
MANAGER OF RESEARCH AND DEVELOPMENT

DATE

SIGNATURE OF OWNER

NAME *(Please print or type)*

CAPACITY OR TITLE

DATE
1

-01) designed by the Plant Variety Protection Office with WordPerfect 6.0a. Replaces STD-470 (02-99) which is obsolete. *(See reverse for instructions and information collection burden statement)*

FOLEY LARDNER
ATTORNEYS AT LAW

BRUSSELS
CHICAGO
DENVER
DETROIT
JACKSONVILLE
LOS ANGELES
MADISON
MILWAUKEE
ORLANDO
SACRAMENTO
SAN DIEGO/DEL MAR
SAN FRANCISCO
TALLAHASSEE
TAMPA
WASHINGTON, D.C.
WEST PALM BEACH

February 26, 2002

Darryn Gibson
Progeny Advanced Genetics
1536 B Moffet Street
Salinas, CA 93905

Re: U.S. Provisional Patent Application No. 60/339,808
Title: Lettuce Variety PX 408
Inventor(s): Nathan K. Olivas; Nathan J. Olivas
Filing Date: December 14, 2001
Our Ref.: 087558-0103

Dear Darryn:

Enclosed is the following in regard to the above-identified application.

The Provisional Filing Receipt:
Serial No.: 60/339,808
Filing Date: December 14, 2001

We will keep you informed of further developments as they occur. If you have any questions regarding this application, please do not hesitate to contact us.

Best regards,

Nina Osseiran

Richard C. Peet
Nina Osseiran

RCP/NMO:ljp
Enclosure(s)

FOLEY & LARDNER
WASHINGTON HARBOUR
3000 K STREET, N.W., SUITE 500
WASHINGTON, D.C. 20007-5143

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FAX: 202.672.5399
WWW.FOLEYLARDNER.COM

WRITER'S DIRECT LINE
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EMAIL ADDRESS
nosseiran@foleylaw.com

CLIENT/MATTER NUMBER
087558-0103

002.733985.1

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200300005544

Exhibit A

Details of the Development of the Variety Cyclone

Cyclone is a unique romaine lettuce variety developed from a hand pollinated cross of Darkland Cos and Major Cos made in 1993 in the San Joaquin Valley. The F1 seed harvested was designated as Gamma # 035. Darkland Cos, a dark green PIC type available from Central Valley Seed was selected as a source of dark color. Major Cos, developed by Genecorp Seed was a source of weight and adaptability. The cross was made, and by the incorporation of the pedigree selection breeding method we developed a dark green, slow bolting romaine variety.

Approximately 50 plants of the F1 seed were planted in a San Joaquin Valley production field for seed increase in 1994. The F2 seed was harvested in August 1994, labeled 94035.

Line 94035 was planted in 1996 in a San Joaquin Valley research production block. Individual plants were selected at market maturity for distinctions in type, size, color and maturity. The particular selection labeled PSR95400-47 stake # 422-1 was noted to be extremely dark in color, have an unusually thick leaf texture, and be significantly shorter and more compact than the remainder of the plants in the block. The selected plant was allowed to mature and the F3 seed from the selection was harvested individually.

The F3 seed from selection number PSR95400-47 stake #422-1 was increased in our 1997 SJV research production block. The block was evaluated and rogued at market maturity removing any visible off-types. The selected remaining plants exhibiting the dark color, thick leaf texture and compact growth habit were allowed to self pollinate and the F4 seed was harvested in bulk in the fall of 1997. The F4 seed was labeled SJ97-Stake #842C-W.

The F4 seed was evaluated in research and development plot trials during the 1998 growing season in the Salinas Valley of California and Yuma Arizona, where it exhibited excellent uniformity demonstrating the selected traits. Recommendation for increase was made, and the F4 seed was planted in our San Joaquin Valley Research production field in 1999. The block was planted and identified as Stake #99B1550. The line was evaluated and rogued first at market maturity, where it was noted as uniform, demonstrating the desired selected traits. Selective rogueing was done, removing earlier maturing plants. The F5 seed was harvested in bulk.

The F5 line was identified as PX 408 in January of 2000 and was trialed through out the Salinas Valley where it demonstrated excellent uniformity in terms of size, type and maturity. The variety, during this trialing period was identified and preliminarily tested for the developing whole leaf and baby leaf lettuce markets. The F5 seed was then increased in our 2000 San Joaquin Valley commercial production field as Stake #00K574. The variety was noted as uniform and stable without variants. The F6 seed was harvested in the fall of 2000.

During the remainder of 2000 and 2001 further trials and tests were conducted for the romaine whole leaf market, through a patented process. The variety tested extremely well, offering thick heavy leafs uniform in size, shape and color. During this same time period trials for the baby leaf market were also conducted, where it also tested extremely well. Based on this trial performance the F6 seed was again increased in our 2001 production and the F7 seed was harvested in September of 2001. Cyclone as observed in multiple field trials and in our seed production crops, has been uniform, stable, and with out variants for 3 generations. Seed from this variety was first sold on December 31, 2001, no harvested material from this variety was sold prior to this date.

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Exhibit B
Statement of Distinctness

Cyclone is a new and distinct variety of romaine lettuce, that most closely resembles Darkland Cos. This variety is distinguished by its distinct plant height, which is shorter than typical romaine. Cyclone is also distinct as it produces thicker leafs with a darker color, and a more uniform size than other romaine varieties.

The following characteristics distinguish Cyclone from its parent variety Major Cos:*

1. Cyclone is darker in color than Major Cos. Cyclone measured 7.5 gy4/6 and 7.5 gy4/4 versus Major cos with a color rating of 5gy 4/6 and 5gy 4/8
2. Cyclone averages 4 days later maturing than Major Cos
3. Cyclone has a statistically significant shorter heart length
4. Cyclone has a statistically significant shorter head length
5. Cyclone has a statistically significant smaller frame diameter
6. Cyclone has a statistically significant shorter leaf
7. Cyclone has a statistically significant thicker leaf

Additional distinctions as cited in their respective Exhibit C documentation:

Characteristic	**Cyclone**	**Major Cos**
Cotyledon shape	Spatulate	Intermediate
Cotyledon leaf undulation	Flat	Medium
4th leaf reflexing	None	Lateral margin
Leaf thickness	Thick	Intermediate
Bolter leaves	Curved	Straight
Bolter leaf margins	Dentate	Entire

The following characteristics distinguish Cyclone from its parent variety Darkland Cos:*

1. Cyclone is darker in color than Darkland Cos. Cyclone measured 7.5 gy4/6 and 7.5 gy4/4 versus Darkland Cos with a color rating of 5gy 5/6 and 5gy 4/8.
2. Cyclone is typically 2-6 days later maturing than Darkland Cos.
3. Cyclone has a statistically significant shorter head length
4. Cyclone has a statistically significant smaller frame diameter
5. Cyclone has a statistically significant shorter leaf
6. Cyclone has a statistically significant thicker leaf

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Additional distinctions as cited in their respective Exhibit C documentation:

Characteristic	Cyclone	Darkland Cos
Cotyledon shape	Spatulate	Broad
Cotyledon leaf shape	Elongated	Oval
Anthocyanin distribution	Absent	Throughout
Cotyledon leaf cupping	Slight	Uncupped
Margin undulation	Moderate	Absent
But midrib	Moderate raised	Flat
Bolter leaves	Curved	Straight
Bolter leaf margins	Dentate	Entire
Bolter terminal inflorescence	Present	Absent
Bolter basal side shoots	Absent	Present

The following characteristics distinguish Cyclone from the variety King Henry:

1. Cyclone has a smother leaf surface than the variety King Henry. The leaf surface of King Henry is described as heavily savoyed or blistered, where as the leaf surface of Cyclone is described as moderately savoyed or blistered.
2. Cyclone is darker in color than King Henry. Cyclone measured 7.5gy4/6 and 7.5gy4/4 versus King Henry with a color rating of 5gy 4/6.
3. Cyclone is a shorter growing plant than King Henry. On average King Henry averages a plant height of 270 cm's. On average, Cyclone averages a plant height of 251 cm's.

The following characteristics distinguish Cyclone from the variety Frontier Cos:

1. Cyclone has a more savoyed leaf surface than Frontier Cos. The leaf surface of Frontier is described as smooth, where as the leaf surface of Cyclone is described as moderately savoyed or blistered.
2. Cyclone is darker in color than Frontier. Cyclone measured 7.5gy4/6 and 7.5gy4/4 versus Frontier with a color rating of 5gy5/6.
3. Cyclone produces a higher yield of useable leaf product than the variety Frontier. On average Cyclone will produce 1.61 finished 10 pound cartons of leaf product from a single tray of 24 plants. Frontier on average produces on average 1.11 finished 10 pound cartons of leaf product from a single tray of 24 plants.

*All data is supported statistically as seen in the following tables of trial results conducted in the Salinas Valley in the 2001 and 2002 growing seasons.

These characteristics are distinct and offer a significant advantage for whole leaf processing by increasing the percent recovery during the patented post harvest process. These characteristics also offer an advantage for the baby leaf lettuce market.

The leaf thickness prevents mechanical damage that can occur during the leaf removal and washing processes, increasing the percentage useable product from the plant.

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The whole leaf market specifies strict leaf sizing for acceptable product. The leaf size of a typical romaine is larger than what is acceptable in the whole leaf market. To get leaves of acceptable sizing, the larger outer leaves and the smaller inner leaves must be discarded. Due to the short growth habit, and uniform leaf size of Cyclone, this variety produces a high number of leaves that fall with in this specified range of acceptance. This distinction is of economic benefit as more of the product from each plant can be processed.

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U. S. Department of Agriculture
Agricultural Marketing Service
Science and Technology Program

Exhibit C

OBJECTIVE DESCRIPTION OF VARIETY
LETTUCE *Lactuca sativa*

NAME OF APPLICANT (S)
PROGENY ADVANCED GENETICS, INC.

ADDRESS (Street and No. or R.F.D. No., City, State, and ZIP Code)
1536 B MOFFETT STREET
SALINAS CALIFORNIA 93905

FOR OFFICIAL USE ONLY
PVP NUMBER **2003 00054**
VARIETY NAME
EXPERIMENTAL DESIGNATION

Place numbers in the boxes for the characters which best describe this variety. Measured data should be the mean of an appropriate number (at least 10) of w spaced plants. Royal Horticultural Society or any recognized color standard may be used to determine plant colors.

The location of the test area is: SALINAS VALLEY, CALIFORNIA

Color System Used: MUNSELL

1. PLANT TYPE: *(See list of suggested check varieties page 4.)*

[0 4]

01=Cutting/Leaf
02=Butterhead
03=Bibb
04=Cos or Romaine
05=Great Lakes Group
06=Vanguard Group
07=Imperial Group
08=Eastern (Ithaca) Group
09=Stem
10=Latin
11=OTHER

2. SEED:

COLOR: [1] 1=White (Silver Gray) 2=Black (Gray Brown) 3=Brown (Amber)

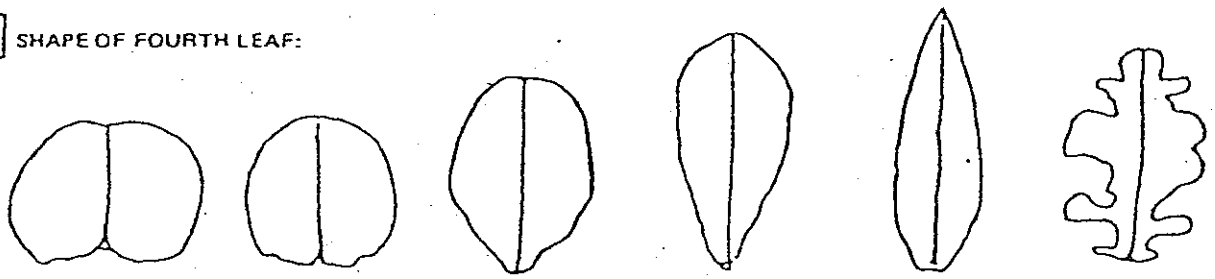
LIGHT DORMANCY: [1] 1=Light Required 2=Light Not Required

HEAT DORMANCY: [1] 1=Susceptible 2=Not Susceptible

3. COTYLEDON TO FOURTH LEAF STAGE: NOTE: Provide a color photograph or photocopy of the fourth leaf from 20 day old seedling grown under optimal conditions.

[3] SHAPE OF COTYLEDONS: 1=Broad 2=Intermediate 3=Spatulate

[4] SHAPE OF FOURTH LEAF:



1 2 3 4 5 6

[1 8] LENGTH/WIDTH INDEX OF FOURTH LEAF: L/W x 10

[1] APICAL MARGIN: } 1=Entire 2=Crenate/Gnawed 3=Finely Dentate 4=Moderately Dentate 5=Coarsely Dentate 6=Incised 7=Lobed 8=OTHER *(specify)*

[4] BASAL MARGIN: }

[1] UNDULATION: 1=Flat 2=Slight 3=Medium 4=Marked

[4] GREEN COLOR: 1=Yellow Green 2=Light Green 3=Medium Green 4=Dark Green 5=Blue Green 6=Silver Green 7=Gray Green

ANTHOCYANIN:

[1] DISTRIBUTION: 1=Absent 2=Margin Only 3=Spotted 4=Throughout 5=OTHER *(specify)*

[ ] CONCENTRATION: 1=Light 2=Moderate 3=Intense

[1] ROLLING: 1=Absent 2=Present

[2] CUPPING: 1=Uncupped 2=Slight 3=Markedly

[1] REFLEXING: 1=None 2=Apical Margin 3=Lateral Margins

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4. MATURE LEAVES *(observe harvest-mature outer leaves)*:

NOTE: Provide color photo of harvest-mature leaves which accurately shows color and margin characteristics.

MARGIN:

[1]	INCISION DEPTH: *(deepest penetration of the margin)*	1=Absent/Shallow (Dark Green Boston)	2=Moderate (Vanguard)	3=Deep (Great Lakes 659)
[1]	INDENTATION: *(finest divisions of the margin)*	1=Entire (Dark Green Boston) 2=Shallowly Dentate (Great Lakes 65)	3=Deeply Dentate (Great Lakes 659) 4=Crenate (Vanguard)	5=OTHER *(specify)*
[2]	UNDULATION OF THE APICAL MARGIN:	1=Absent/Slight (Dark Green Boston)	2=Moderate (Vanguard)	3=Strong (Great Lakes 659
[5]	GREEN COLOR:	1=Very Light Green (Bibb) 2=Light Green (Minetto)	3=Medium Green (Great Lakes) 4=Dark Green (Vanguard)	5=Very Dark Green 6=OTHER

ANTHOCYANIN *(grown at or below 10 C)*:

[1]	DISTRIBUTION:	1=Absent 2=Margin Only (Big Boston)	3=Spotted (Calif. Cream Butter) 4=Throughout (Prize Head)	5=OTHER *(specify)*
[\]	CONCENTRATION:	1=Light (Iceberg)	2=Moderate (Prize Head)	3=Intense (Ruby)
[2]	SIZE:	1=Small	2=Medium	3=Large
[2]	GLOSSINESS:	1=Dull (Vanguard)	2=Moderate (Salinas)	3=Glossy (Great Lakes)
[2]	BLISTERING:	1=Absent/Slight (Salinas)	2=Moderate (Vanguard)	3=Strong (Prize Head)
[3]	LEAF THICKNESS:	1=Thin	2=Intermediate	3=Thick
[1]	TRICHOMES:	1=Absent (smooth)	2=Present (spiny)	

5. PLANT *(at market stage. Choose a comparison variety appropriate for this type.)*:

[3][4] SPREAD OF FRAME LEAVES: cm This Variety [3][8] cm DARKLAND COS *(specify comparison variety)*

[3][4] HEAD DIAMETER *(market trimmed with single cap leaf)*: cm This Variety [3][8] cm DARKLAND COS *(specify comparison variety)*

[4]	HEAD SHAPE:	1=Flattened 2=Slightly Flattened	3=Spherical 4=Elongate	5=Non-Heading 6=OTHER
[1]	HEAD SIZE CLASS:	1=Small	2=Medium	3=Large

[2][4] HEAD COUNT PER CARTON

[7][7][0] HEAD WEIGHT: g This Variety [8][6][3] g DARKLAND COS *(specify comparison variety)*

[2]	HEAD FIRMNESS:	1=Loose 2=Moderate	3=Firm 4=Very Firm

6. BUTT *(bottom of market-trimmed head)*:

[3]	SHAPE:	1=Slightly Concave	2=Flat	3=Rounded
[2]	MIDRIB:	1=Flattened (Salinas)	2=Moderately Raised	3=Prominently Raised (Great Lakes 659)

7. CORE *(stem of market-trimmed head)*:

[3][9] mm Diameter at base of head

[.][8][7] Ratio of head diameter/core diameter

[4][9] Core height from base of head to apex: mm This Variety [4][9] mm DARKLAND COS *(specify comparison variety)*

8. BOLTING *(Give First Water Date MAY 3, 2002)*: NOTE: First Water Date is the date seed first receives adequate moisture to germinate. This can and often does equal the planting date.

[6][2] Number of days from First Water Date to seed stalk emergence *(summer conditions)*: This Variety [6][6] DARKLAND COS *(specify comparison variety)*

[2]	BOLTING CLASS:	1=Very Slow 2=Slow	3=Medium 4=Rapid	5=Very Rapid

[1][1][8] Height of mature seed stalk: cm This Variety [1][2][6] cm DARKLAND COS *(specify comparison variety)*

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29	Spread of Bolter Plant *(at widest point)*: cm This Variety	36 cm DARKLAND COS *(specify comparison variety)*		
2	BOLTER LEAVES:	1=Straight	2=Curved	
2	MARGIN:	1=Entire	2=Dentate	
3	COLOR:	1=Light Green	2=Medium Green	3=Dark Green
	BOLTER HABIT:			
2	TERMINAL INFLORESCENCE:	1=Absent	2=Present	
2	LATERAL SHOOTS: *(above head)*	1=Absent	2=Present	
1	BASAL SIDE SHOOTS:	1=Absent	2=Present	

9. MATURITY *(earliness of harvest-mature head formation)*:

NOTE: Complete this section for at least one season.

SEASON	Applic. 1/ #of days	Check 1/ #of days	CHECK VARIETY 2/
Spring	89	85	DARKLAND COS
Summer	66	62	DARKLAND COS
Fall	70	68	DARKLAND COS
Winter	98	92	DARKLAND COS

Give planting date(s) and location(s):

Spring MARCH 10, SALINAS VALLEY CA

Summer JUNE 27, SALINAS VALLEY CA

Fall AUG 24, SALINAS VALLEY CA; SEPT 22, YUMA AZ

Winter FEB 4, SALINAS VALLEY CA

1/ First water date to harvest. 2/ Fill in check variety name on the appropriate line.

10. ADAPTATION:

PRIMARY REGIONS OF ADAPTION *(tested and proven adapted)*: (0=Not tested 1=Not Adapted 2=Adapted)

2	Southwest *(Calif., Ariz. desert)*	2	West Coast	0	Northeast
0	Northcentral	0	Southeast	☐	OTHER

SEASON:

2	Spring (area SALINAS VALLEY)	2	Fall (area SALINAS VALLEY, YUMA)
2	Summer (area SALINAS VALLEY)	☐	Winter (area SALINAS VALLEY)

0	GREENHOUSE:	0=Not tested	1=Not Adapted	2=Adapted
3	SOIL TYPE:	1=Mineral	2=Organic	3=Both

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11. DISEASES AND STRESS REACTIONS (0=Not tested; 1=Susceptible; 2=Intermediate; 3=Resistant; 4=Highly resistant; 5=Tolerant):

VIRUS

- [1] Big Vein
- [1] Lettuce Mosaic
- [0] Cucumber Mosaic
- [0] Broad Bean Wilt
- [0] Turnip Mosaic
- [0] Beet Western Yellows
- [0] Lett. Infectious Yellows
- [ ] Other Virus _____

FUNGAL/BACTERIAL

- [1] Corky Root Rot (Pythium Root Rot)
- [2] Downy Mildew (Races _____)
- [5] Powdery Mildew
- [2] Sclerotinia Rot
- [0] Bacterial Soft Rot (Pseudomonas spp. & others)
- [0] Botrytis (Gray Mold)
- [ ] OTHER _____

INSECTS

- [0] Cabbage Loopers
- [0] Root Aphids
- [0] Green Peach Aphid
- [ ] Other Insect _____

PHYSIOLOGICAL/STRESS

- [5] Tipburn
- [5] Heat
- [0] Drought
- [2] Cold
- [0] Salt
- [6] Brown Rib (Rib Discoloration, Rib Blight)
- [ ] OTHER _____

POST HARVEST

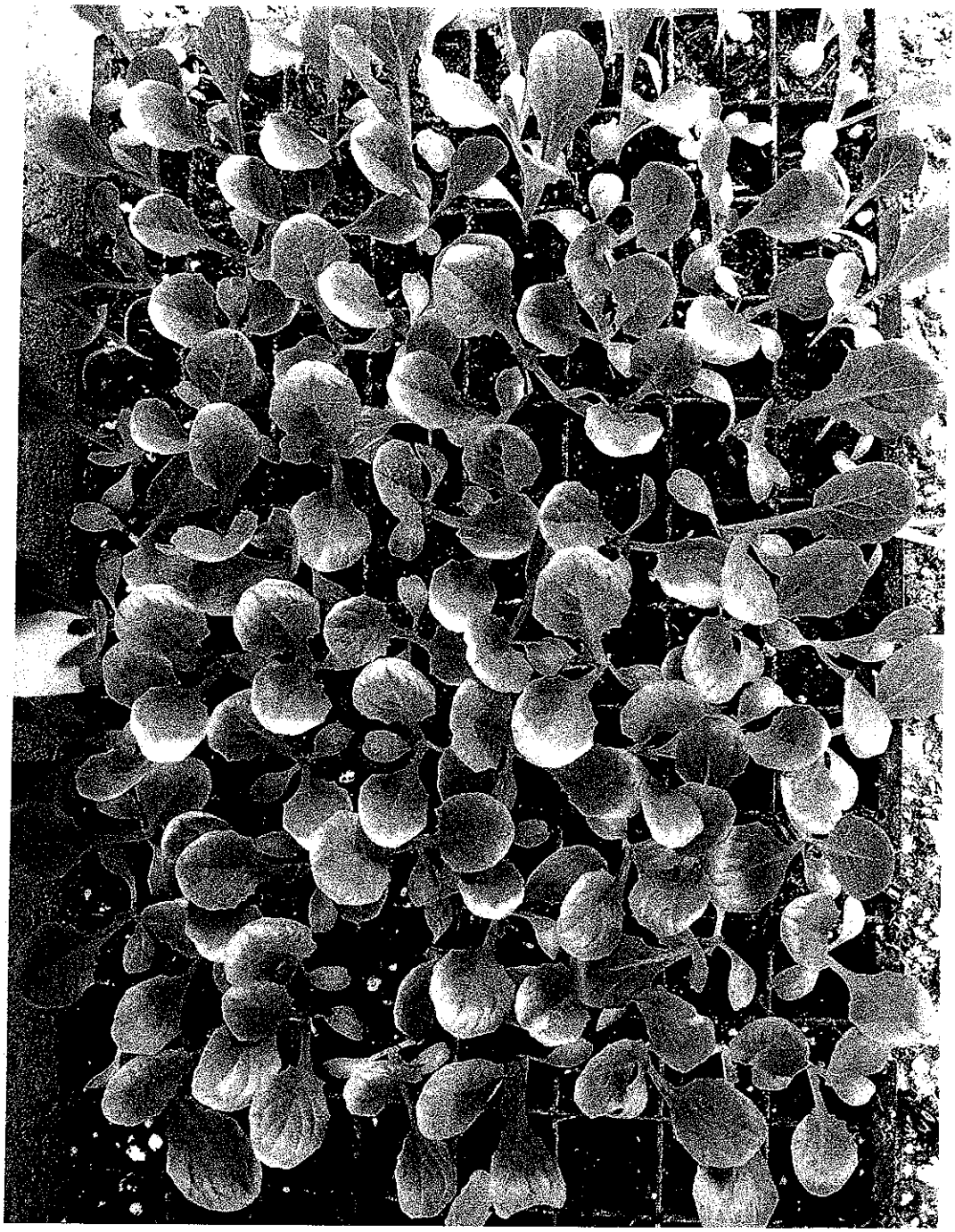
- [5] Pink Rib
- [5] Russet Spotting
- [5] Rusty Brown Discoloration
- [5] Internal Rib Necrosis (Blacknesrt, Gray Rib, Gray Streak)
- [5] Brown Stain

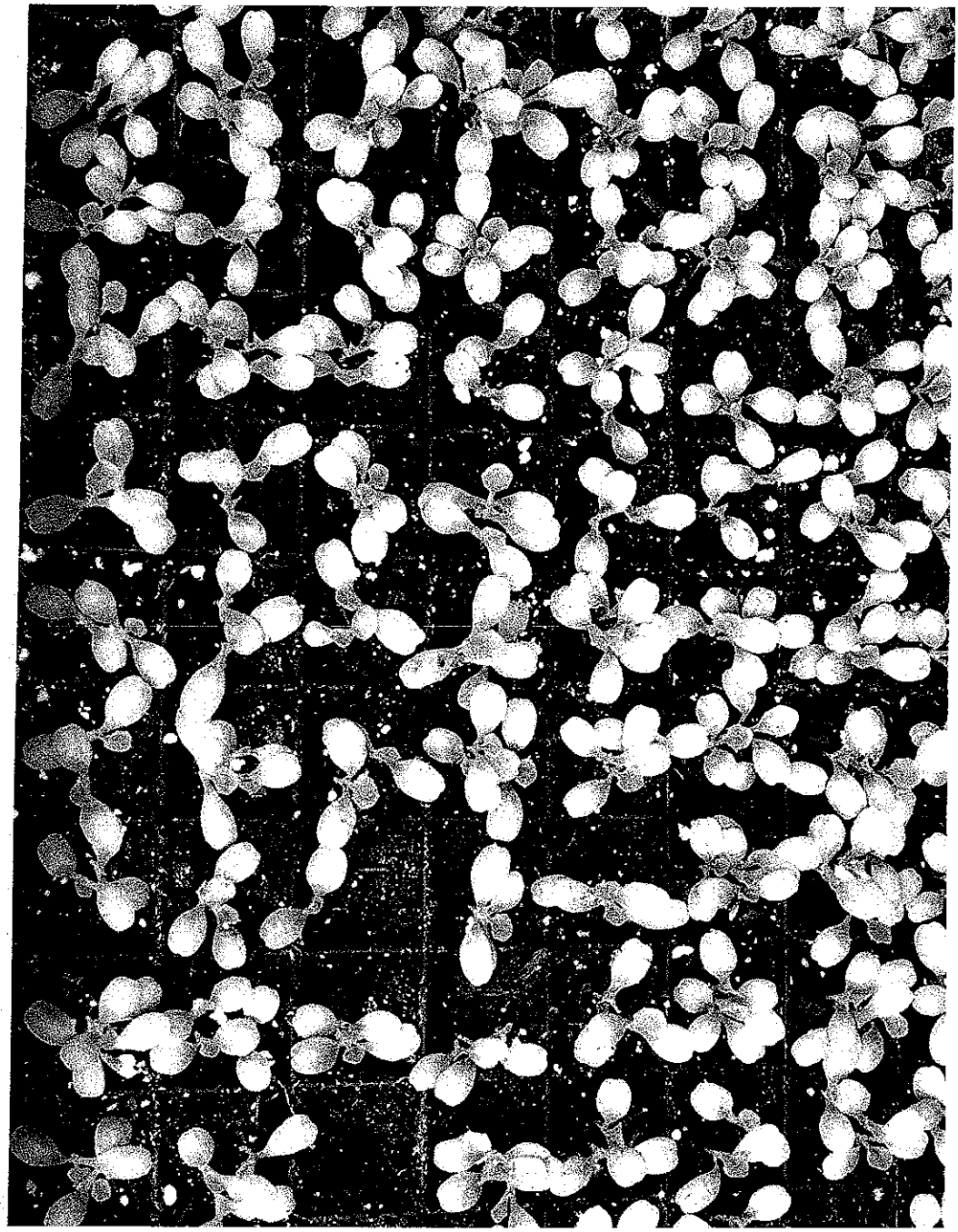
12. BIOCHEMICAL OR ELECTROPHORETIC MARKERS:

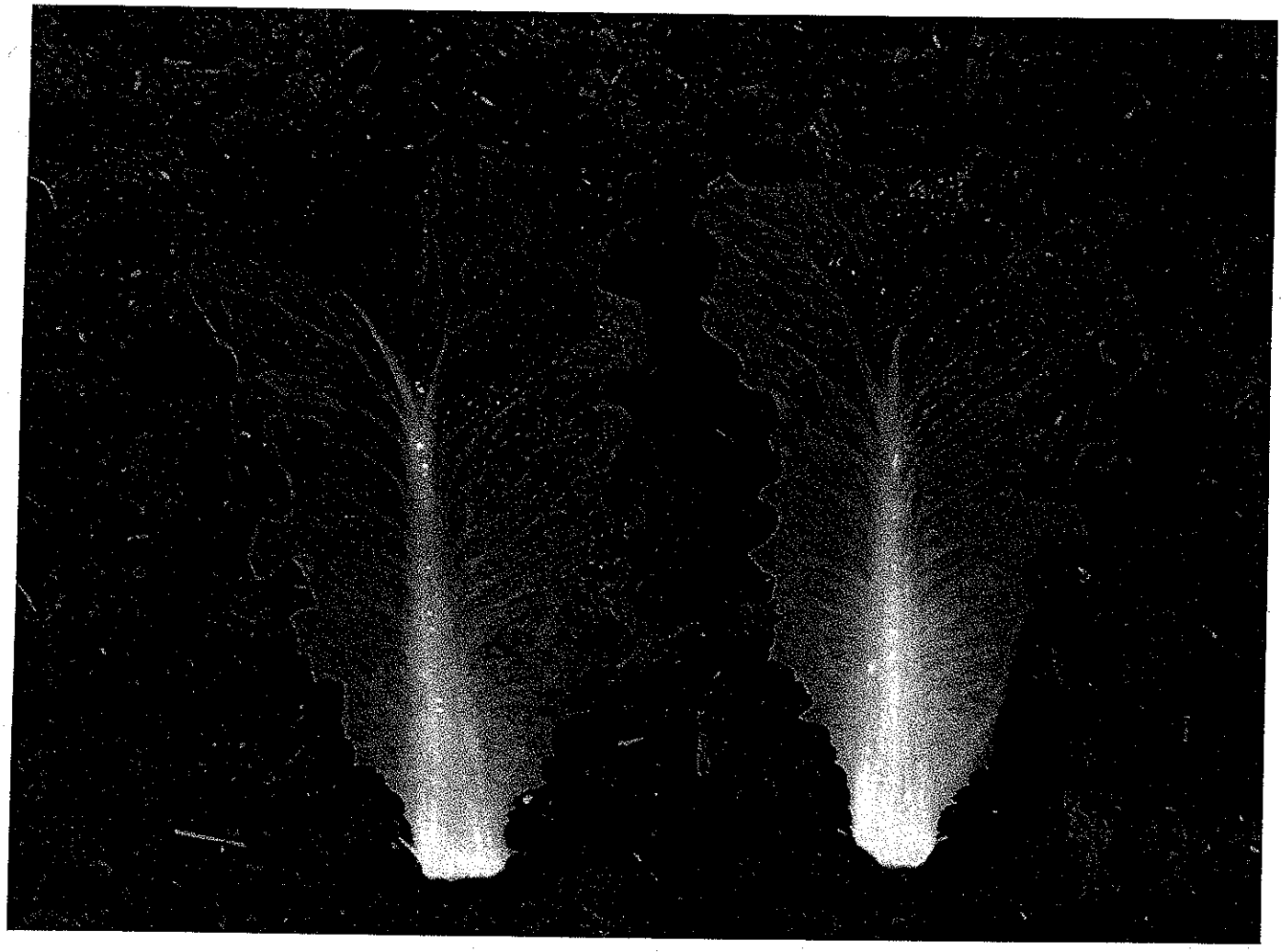
13. COMMENTS:

SUGGESTED CHECK VARIETIES

TYPE	CHECK VARIETY
1) CUTTING/LEAF	SALAD BOWL
2) BUTTERHEAD	DARK GREEN BOSTON
3) 8188	8188
4) COS, OR ROMAINE	PARRIS ISLAND
5) GREAT LAKES GROUP	GREAT LAKES 659-700
6) VANGUARD GROUP	VANGUARD
7) IMPERIAL GROUP	VIVA
8) EASTERN GROUP	ITHACA
9) STEM	CELTUCE
10) LATIN	MATCHLESS







Cyclone Leafs

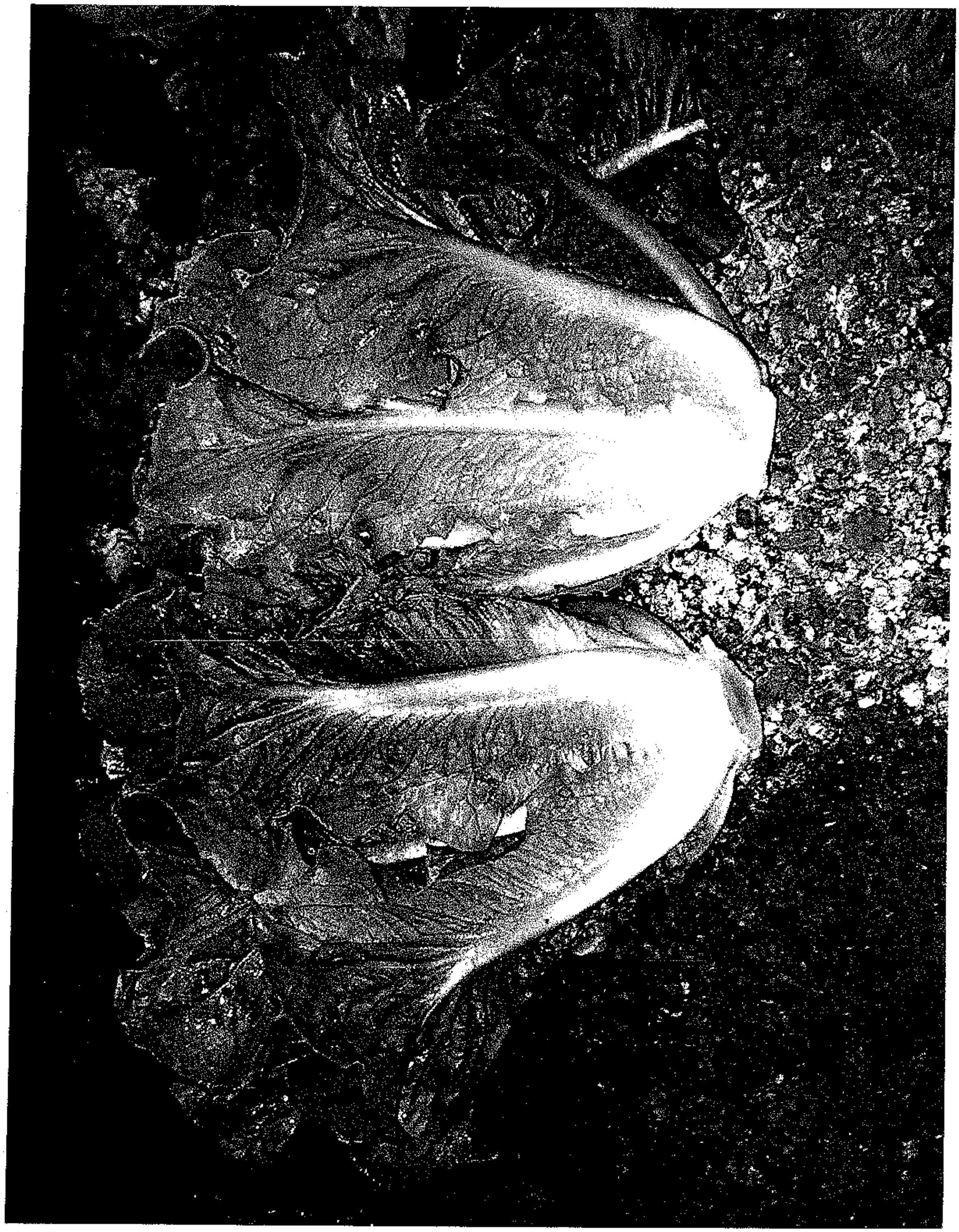
PROGENY
advanced genetics®

Exhibit D:

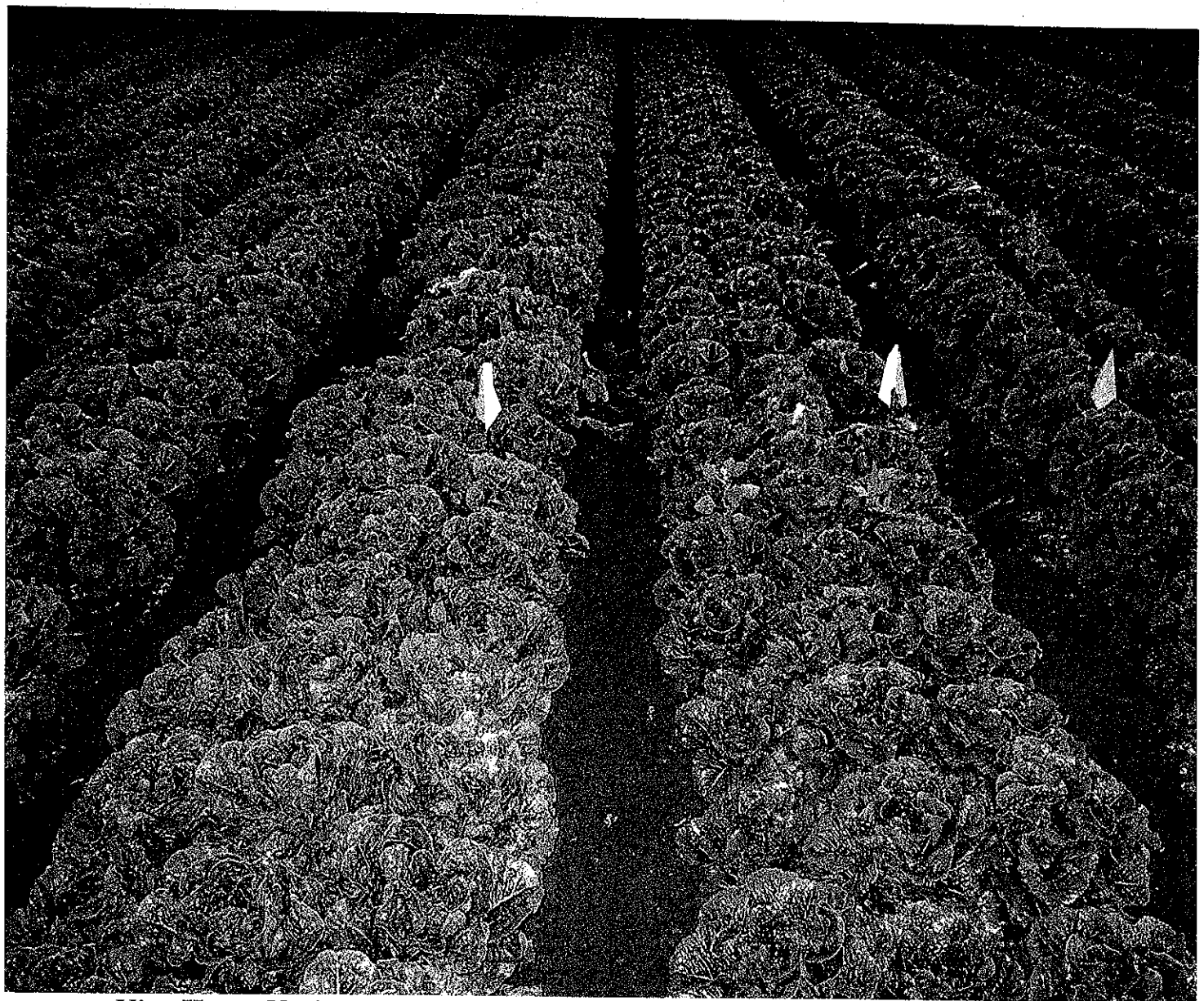
Additional Variety Description:

Cyclone is a new and unique variety of romaine lettuce due to its dark color, and growth habit. The growth habit is distinct as it is slower growing and shorter in height than other romaine varieties. Cyclone is also distinguished by the uniformity, texture, and size of its leaves. This variety produces a higher than normal percentage of leaves of the same size. This is a benefit in the whole leaf pack, as more of the leaves from each plant can be used.

1536 B. Moffett St. • Salinas, CA 93905 • Office 831.751.6030 • Fax 831.751.6032



Cyclone



King Henry Variety

Cyclone Variety

Cyclone

20030054

Trial map #:	PDS01027	Location:	Salinas	Ranch/lot:	5-6 north	Date evald:	8/28/01
Wet Date:	6/27/01	Grower:	Royal Packing Commercial V: PIC			Eval by:	dg ac

	Date Mature	Days to Maturity	Color
Cyclone	9/1/01	66	7.5gy4//4
Major Cos	9/3/01	68	5gy 4/8

	Core Diameter (mm)		Core Length (mm)		Heart Length (mm)		Head length (mm)		Head length:Core Length		Frame diam (cm)		Head wt. (g)	
Sample #	Cyclone	Major Cos	Cyclone	Major Cos	Cyclone	Major Cos	Cyclone	Major Cos	Cyclone	Major Cos	Cyclone	Major Cos	Cyclone	Major Cos
1	35	43	35	43	180	210	250	290	7.1	6.7	33	36	685	549
2	40	40	55	40	180	200	210	260	3.8	6.5	30	41	806	838
3	39	45	49	45	180	230	230	290	4.7	6.4	29	38	702	537
4	40	52	56	52	160	240	210	300	3.8	5.8	28	40	737	635
5	39	43	54	43	190	240	250	310	4.6	7.2	30	39	830	497
6	42	45	59	45	180	270	230	310	3.9	6.9	32	38	892	721
7	40	40	51	40	200	240	240	310	4.7	7.8	31	39	456	575
8	41	39	56	39	170	180	210	280	3.8	7.2	33	40	719	659
9	42	42	40	42	160	240	200	320	5.0	7.6	33	41	707	641
10	40	40	42	40	210	210	250	300	6.0	7.5	28	40	714	799
11	41	39	49	39	210	230	250	320	5.1	8.2	32	39	461	475
12	40	45	49	45	170	210	220	290	4.5	6.4	33	38	659	644
Average	39.9	42.8	47.0	42.8	182.5	225.0	229.2	298.3	4.7	7.0	31.0	39.1	697.3	630.8
Stan dev	1.83E+00	3.72E+00	7.29E+00	3.72E+00	1.71E+01	2.39E+01	1.88E+01	1.75E+01	1.00E+00	6.86E-01	1.95E+00	1.44E+00	1.30E+02	1.13E+02
T test	2.72E-02		8.47E-03		5.23E-05		4.22E-09		1.56E-06		8.58E-11		1.95E-01	

	Leaf Count		Leaf Length		Leaf Width	
	Major Cos	Cyclone	Major Cos	Cyclone	Major Cos	Cyclone
1	20	22	22	16	9	13
2	21	20	20	16	9	13
3	19	29	20	17	11	13
4	19	19	24	19	13	13
5	22	22	25	16	13	15
6	21	19	25	20	15	13
7	21	19	27	20	15	15
8	20	19	28	20	17	17
9	20	21	30	21	14	15
10	21	20	31	19	17	18
11	20	20	31	20	19	18
12	20	20	33	21	19	19
13			31	21	20	15
14			30	21	20	15
15			19	21	19	16
16			17	21	21	17
17			21	20	22	17
18			20	20	22	14
19			27	19	20	18
20			29	19	17	18
Average	20	21	26	19	17	16
Standard Dev	0.887625365	2.79067712	4.872047014	1.755442664	4.070432539	2.036508881
T-Test	0.560242129		1.93177E-05		0.334247376	

Leaf length and leaf width numbers are measurements of the useable leafs from one plant.

Data highlighted in yellow indicates a statistically significant difference at a minimum 95% confidence level

Statistically Distinct Trait	Confidence Level %
Core Diameter	97
Core length	99
Heart Length	99
Head length	99
Head length:Core Length	99
Frame diam	99
Leaf Length	99

20

Trial map #:	PDS01038	Location:	Salinas	Ranch/lot:	Turry	Date evald:	10/30/01
Wet Date:	8/24/01	Grower:	Costa/Mann	Commercial Var:	10	Eval by:	AC/DG

	Date Mature	ays to Maturity	Color
Cyclone	11/2/01	70	7.5gy4/4
Major Cos	10/30/01	67	5gy5/6

	Core Diameter (mm)		Core Length (mm)		Heart Length (mm)		Head length (mm)		Head length:Core Length		Frame diam (cm)		Head wt. (g)	
Sample #	Major Cos	Cyclone	Major Cos	Cyclone	Major Cos	Cyclone	Major Cos	Cyclone	Major Cos	Cyclone	Major Cos	Cyclone	Major Cos	Cyclone
1	39	34	44	35	260	210	340	270	7.7	7.7	42	32	670	472
2	40	35	61	41	300	210	360	270	5.9	6.6	33	36	617	508
3	41	36	40	39	280	220	330	270	8.3	6.9	40	35	599	444
4	40	37	35	36	240	230	310	270	8.9	7.5	39	36	637	479
5	39	38	47	44	270	210	320	270	6.8	6.1	40	35	719	462
6	41	38	51	43	270	230	349	270	6.8	6.3	41	34	643	502
7	42	39	49	41	270	200	330	280	6.7	6.8	41	35	753	461
8	40	37	40	39	260	220	340	280	8.5	7.2	42	36	679	576
9	39	35	48	41	260	230	320	270	6.7	6.6	43	35	704	458
10	38	36	49	29	250	230	320	250	6.5	8.6	38	34	635	432
11	40	35	41	41	260	240	340	290	8.3	7.1	42	35	497	468
12	41	34	48	39	250	220	340	280	7.1	7.2	38	35	596	454
Average	40.0	36.2	46.1	39.0	264.2	220.8	333.3	272.5	7.3	7.1	39.9	34.8	645.8	476.3
Stan dev	1.13E+00	1.64E+00	6.73E+00	4.07E+00	1.56E+01	1.16E+01	1.43E+01	9.65E+00	9.38E-01	6.79E-01	2.71E+00	1.11E+00	6.73E+01	3.81E+01
T test	1.06E-06		5.00E-03		1.11E-07		2.78E-11		3.80E-01		4.81E-06		1.39E-07	

	Leaf Count/ Plant		Leaf Length		Leaf Width	
	Major Cos	Cyclone	Major Cos	Cyclone	Major Cos	Cyclone
1	22	22	19	16	10	12
2	17	20	21	19	11	12
3	17	20	23	19	10	12
4	20	17	25	21	13	13
5	21	17	28	20	15	16
6	24	18	24	21	12	14
7	18	19	25	21	13	16
8	20	17	29	22	18	17
9	21	20	26	22	14	18
10	24	20	28	22	16	16
11	17	19	29	22	17	17
12	20	19	20	20	17	17
13			30	19	20	15
14			29	21	21	19
15			28	21	18	17
16			29	20	19	16
17			28	19	18	17
18			30	20	18	16
19			28	17	19	15
20			27	19	18	16
Average	20	19	26	20	16	16
Standard Dev	2.503028469	1.53741223	3.341918768	1.637552731	3.375998878	2.01246118
T-Test	0.214725829		3.83139E-08		0.735138583	

Data highlighted in yellow indicates a statistically significant difference at a minimum 95% confidence level

Statistically Distinct Trait	Confidence Level %
Core Diameter	99
Core length	99
Heart Length	99
Head length	99
Frame diam	99
Head Weight	99
Leaf Length	99

Leaf length and leaf width numbers are measurements of the useable leafs from one plant.

Trial map #:	RSV02026	Location:	Soledad	Ranch/lot:	Salmina 2	Date evald:	5/7/02
Wet Date:	2/4/02	Grower:	Costa/Mann	Commercial Va	El Camino Real	Eval by:	dg/ac

	Date Mature	Days to Maturity	Color
Cyclone	5/13/02	98	7.5gy4/6
Major Cos	5/7/02	92	5gy4/6

	Core Diameter (mm)		Core Length (mm)		Heart Length (mm)		Head length (mm)		Head length:Core Length		Frame diam (cm)		Head wt. (g)	
Sample #	Major Cos	Cyclone	Major Cos	Cyclone	Major Cos	Cyclone	Major Cos	Cyclone	Major Cos	Cyclone	Major Cos	Cyclone	Major Cos	Cyclone
1	51	39	55	60	250	210	280	270	5.1	4.5	45	34	801	847
2	52	55	53	50	240	200	300	250	5.7	5.0	44	37	1034	883
3	52	52	55	61	270	220	330	280	6.0	4.6	44	32	788	777
4	56	37	65	60	270	190	340	270	5.2	4.5	51	37	939	993
5	55	39	75	61	270	200	350	270	4.7	4.4	42	34	1064	945
6	52	52	65	62	250	220	320	260	4.9	4.2	42	35	1082	792
7	52	37	60	65	300	210	340	250	5.7	3.8	43	30	1219	751
8	54	39	70	55	270	190	350	250	5.0	4.5	44	39	816	957
9	58	39	45	55	280	200	300	260	6.7	4.7	42	38	1085	982
10	52	41	65	60	300	210	360	280	5.5	4.7	48	36	1175	1134
11	56	36	70	65	280	210	340	260	4.9	4.0	43	38	970	1036
12	41	55	50	62	290	220	380	270	7.6	4.4	42	35	993	884
Average	52.6	43.4	60.7	59.7	272.5	206.7	332.5	264.2	5.6	4.4	44.2	35.4	997.2	915.1
Stan dev	4.25E+00	7.61E+00	9.14E+00	4.36E+00	1.91E+01	1.07E+01	2.83E+01	1.08E+01	8.50E-01	3.17E-01	2.76E+00	2.64E+00	1.42E+02	1.14E+02
T test	1.44E-03		7.35E-01		5.91E-10		8.86E-08		2.80E-04		6.78E-08		1.32E-01	

	Leaf Count/ Plant		Leaf Length (mm)		Leaf Width (mm)		Leaf Thickness (mm)	
	Major Cos	Cyclone	Major Cos	Cyclone	Major Cos	Cyclone	Major Cos	Cyclone
1	45	35	251	231	100	141	0.93	0.95
2	39	32	272	192	142	126	0.91	1.22
3	39	28	292	221	145	136	0.84	0.97
4	36	28	283	245	146	154	0.72	0.99
5	42	26	321	198	156	110	0.74	0.95
6	41	39	291	233	152	182	0.80	0.93
7	38	37	320	218	182	152	0.70	0.95
8	37	35	331	227	221	144	0.98	0.98
9	44	34	305	242	196	180	0.86	0.96
10	44	34	331	243	211	155	0.97	0.82
11	31	32	310	248	185	180	0.85	0.98
12	43	32	331	254	219	187	0.95	0.99
13			336	262	210	177	0.92	0.82
14			320	218	181	141	0.91	0.82
15			320	237	190	152	0.75	0.99
16			314	239	200	180	0.74	0.97
17			293	252	210	178	0.85	1.47
18			291	248	200	159	0.93	1.29
19			306	238	202	162	0.91	0.96
20			313	233	194	160	0.85	0.91
Average	40	38	307	234	182	158	0.86	1.00
Standard Dev	4.077841081	3.845501111	22.04892884	17.79554941	31.89277479	20.94252787	0.087307894	0.158426473
T-Test	1.86E-04		6.80E-14		7.06E-03		1.31E-03	

Indicates that the varieties are significantly different for this trait at at least a 95% confidence level

Statistically Distinct Trait	Confidence Level %
Core Diameter	98.6
Heart Length	99
Head length	99
Head length:Core Length	99
Frame diam	99
Leaf Count/ Plant	99
Leaf Length	99
Leaf Width	99
Leaf Thickness	99

Trial map #:	RSV02049	**Location:**	Salinas	**Ranch/lot:**	12--19	**Date evald:** 5/31/02
Wet Date:	3/10/02	**Grower:**	D'arrigo	**Commercial Var:**	Frontier	**Eval by:** AC

	Date Mature	Days to Maturity	Color
Cyclone	6/7/02	89	7.5gy4/4
Major Cos	6/2/02	84	5gy4/8

	Core Diameter (mm)		Core Length (mm)		Heart Length (mm)		Head length (mm)		Head length:Core Length		Frame diam (cm)		Head wt. (g)	
Sample #	Major Cos	PX 408	Major Cos	Cyclone	Major Cos	Cyclone	Major Cos	Cyclone	Major Cos	Cyclone	Major Cos	Cyclone	Major Cos	Cyclone
1	44	40	50	42	235	165	305	237	6.1	5.6	39	35	1182	925
2	40	36	64	59	240	190	341	262	5.3	4.4	35	32	953	979
3	40	41	65	47	243	162	337	229	5.2	4.9	39	33	1136	955
4	40	37	57	57	224	182	312	239	5.5	4.2	35	34	975	1120
5	39	37	62	59	255	179	319	252	5.1	4.3	41	33	853	875
6	37	36	49	59	205	192	277	269	5.7	4.6	38	32	948	805
7	45	35	37	62	226	205	282	262	7.6	4.2	38	32	1191	1040
8	43	40	64	57	226	179	322	239	5.0	4.2	34	34	702	786
9	37	32	51	39	216	172	277	249	5.4	6.4	38	38	758	995
10	35	45	67	44	209	159	299	237	4.5	5.4	38	33	885	1013
11	37	40	54	46	216	166	294	224	5.4	4.9	35	34	869	1156
12	39	42	67	44	226	169	304	205	4.5	4.7	39	34	1004	1286
Average	39.7	38.4	57.3	51.3	226.8	176.7	305.8	242.0	5.5	4.8	37.4	33.7	954.7	994.6
Stan dev	3.06E+00	3.55E+00	9.27E+00	8.25E+00	1.46E+01	1.39E+01	2.15E+01	1.81E+01	8.17E-01	6.83E-01	2.15E+00	1.67E+00	1.56E+02	1.44E+02
T test	3.66E-01		1.08E-01		1.64E-08		8.11E-08		4.82E-02		9.21E-05		5.22E-01	

	Leaf Count/ Plant		Leaf Length		Leaf Width		Leaf Thickness	
Sample #	Major Cos	Cyclone	Major Cos	Cyclone	Major Cos	Cyclone	Major Cos	Cyclone
1	37	24	274	227	132	168	0.50	0.80
2	37	31	276	214	142	192	0.60	0.80
3	35	36	271	220	150	125	0.50	0.80
4	32	31	254	222	176	186	0.50	0.60
5	26	35	271	219	135	177	0.40	0.80
6	32	27	236	235	148	146	0.50	0.50
7	35	35	237	243	142	152	0.40	0.50
8	34	31	241	234	132	144	0.90	0.60
9	39	29	262	238	163	164	0.70	0.70
10	38	36	255	232	154	168	0.60	0.50
11	40	29	263	215	174	136	0.40	0.70
12	37	33	228	204	149	189	0.50	0.50
13			269	223	152	186	0.60	0.60
14			279	219	162	165	0.50	0.50
15			252	225	159	139	0.50	0.50
16			266	214	166	142	0.50	0.50
17			258	239	148	160	0.50	0.50
18			256	209	145	169	0.60	0.60
19			229	228	139	163	0.60	0.80
20			259	238	132	159	0.50	0.80
Average	35	31	257	225	150	162	0.54	0.63
Standard Dev	3.8336627	3.776923552	15.52112313	10.88166009	13.38105495	18.92227871	0.114248114	0.130182059
T-Test	2.46E-02		4.83E-09		3.25E-02		2.56E-02	

Indicates that the varieties are significantly different for this trait at at least a 95% confidence level

Statistically Distinct Trait	Confidence Level %
Heart Length	99
Head length	99
Head length:Core Length	95.2
Frame diam	99
Leaf Count/ Plant	97.5
Leaf Length	99
Leaf Width	96.8
Leaf Thickness	97.4

Trial map #:	PDS01027	**Location:**	Salinas	**Ranch/lot:**	5-6 north	**Date evald:**	8/28/01
Wet Date:	6/27/01	**Grower:**	Royal Packing	**Commercial Var:**	PIC	**Eval by:**	dg ac

	Date Mature	Days to Maturity	Color
Cyclone	9/1/01	66	7.5gy4//4
Darkland Cos	8/28/01	62	5gy 4/8

	Core Diameter (mm)		Core Length (mm)		Heart Length (mm)		Head length (mm)		Head length:Core Length		Frame diam (cm)		Head wt. (g)	
Sample #	Cyclone	Darkland Cos	Cyclone	Darkland Cos	Cyclone	Darkland Cos	Cyclone	Darkland Cos	Cyclone	Darkland Cos	Cyclone	Darkland Cos	Cyclone	Darkland Cos
1	35	40	45	50	180	210	250	290	5.6	5.8	33	37	685	1008
2	40	39	40	60	180	200	210	280	5.3	4.7	30	39	806	529
3	39	42	45	50	180	190	230	260	5.1	5.2	29	39	702	999
4	40	42	40	40	160	210	210	290	5.3	7.3	28	40	737	825
5	39	43	50	59	190	220	250	290	5.0	4.9	30	38	830	913
6	42	40	50	50	180	190	230	270	4.6	5.4	32	36	892	1092
7	40	45	49	39	200	190	240	260	4.9	6.7	31	40	456	1048
8	41	42	43	65	170	220	210	300	4.9	4.6	33	39	719	880
9	42	46	35	59	160	220	200	310	5.7	5.3	33	40	707	862
10	40	43	55	55	210	240	250	310	4.5	5.6	28	35	714	849
11	41	41	55	55	210	210	250	290	4.5	5.3	32	36	461	843
12	40	42	43	52	170	190	220	270	5.1	5.2	33	38	659	910
Average	39.9	42.1	45.8	52.8	182.5	207.5	229.2	285.0	5.0	5.5	31.0	38.1	697.3	896.5
Stan dev	1.83E+00	2.02E+00	6.15E+00	7.78E+00	1.71E+01	1.60E+01	1.88E+01	1.73E+01	3.75E-01	7.78E-01	1.95E+00	1.73E+00	1.30E+02	1.45E+02
T test	1.16E-02		2.29E-02		1.27E-03		1.48E-07		8.48E-02		3.66E-09		1.82E-03	

	Leaf Count/ Plant		Leaf Length		Leaf Width	
	Darkland Cos	Cyclone	Darkland Cos	Cyclone	Darkland Cos	Cyclone
1	20	22	21	16	9	13
2	20	20	21	16	9	13
3	20	29	25	17	12	13
4	19	19	24	19	14	13
5	20	22	25	16	12	15
6	21	19	25	20	15	13
7	22	19	25	20	19	15
8	22	19	26	20	18	17
9	19	21	26	21	16	15
10	22	20	28	19	15	18
11	22	20	29	20	17	18
12	22	20	30	21	17	19
13			28	21	18	15
14			30	21	20	15
15			31	21	18	16
16			31	21	18	17
17			19	20	19	17
18			20	20	19	14
19			27	19	17	18
			29	19	19	18
Average	21	21	26	19	16	15
Standard Dev	1.215431087	2.79067712	3.670651742	1.801558779	3.300318964	2.010207868
T-Test	0.925301893		4.42705E-08		0.638773373	

Data highlighted in yellow indicates a statistically significant difference at a minimum 95% confidence level

Statistically Distinct Trait	Confidence Level %
Core Diameter	99
Core length	98
Heart Length	99
Head length	99
Frame diam	99
Head Weight	99
Leaf Length	99

Leaf length and leaf width numbers are measurements of the useable leafs from one plant.

Trial map #:	PDS01038	**Location:**	Salinas	**Ranch/lot:**	Turry	**Date evald:**	10/30/01
Wet Date:	8/24/01	**Grower:**	Costa/Mann	**Commercial Va**	10	**Eval by:**	AC/DG

	Date Mature	Days to Maturity	Color
Cyclone	11/2/01	70	7.5gy4/4
Darkland cos	10/31/01	68	5gy 4/8

	Core Diameter (mm)		Core Length (mm)		Heart Length (mm)		Head length (mm)		Head length:Core Length		Frame diam (cm)		Head wt. (g)	
Sample #	Darkland Cos	Cyclone	Darkland Cos	Cyclone	Darkland Cos	Cyclone	Darkland C	Cyclone	Darkland Cos	Cyclone	Darkland Cos	Cyclone	Darkland Cos	Cyclone
1	39	34	40	35	240	210	280	270	7.0	7.7	39	32	630	472
2	41	35	45	41	230	210	290	270	6.4	6.6	38	36	667	508
3	32	36	43	39	230	220	290	270	6.7	6.9	37	35	548	444
4	38	37	42	36	270	230	320	270	7.6	7.5	39	36	704	479
5	31	38	45	44	280	210	330	270	7.3	6.1	37	35	453	462
6	35	38	35	43	240	230	290	270	8.3	6.3	40	34	577	502
7	31	39	49	41	240	200	290	280	5.9	6.8	36	35	465	461
8	32	37	35	39	200	220	250	280	7.1	7.2	37	36	455	576
9	34	35	39	41	210	230	260	270	6.7	6.6	38	35	460	458
10	36	36	47	29	220	230	320	250	6.8	8.6	39	34	447	432
11	37	35	40	41	230	240	280	290	7.0	7.1	39	35	340	468
12	36	34	35	39	230	220	290	280	8.3	7.2	37	35	442	454
Average	35.2	36.2	41.3	39.0	235.0	220.8	290.8	272.5	7.1	7.1	38.0	34.8	515.7	476.3
Stan dev	3.27E+00	1.64E+00	4.77E+00	4.07E+00	2.24E+01	1.16E+01	2.35E+01	9.65E+00	7.00E-01	6.79E-01	1.21E+00	1.11E+00	1.09E+02	3.81E+01
T test	3.54E-01		2.27E-01		6.45E-02		2.05E-02		8.51E-01		1.03E-06		2.50E-01	

	Leaf Count/ Plant		Leaf Length		Leaf Width	
	Cyclone	Darkland Cos	Cyclone	Darkland Cos	Cyclone	Darkland Cos
1	22	19	16	20	12	9
2	20	20	19	21	12	9
3	20	20	19	24	12	12
4	17	21	21	25	13	14
5	17	17	20	23	16	12
6	18	16	21	26	14	15
7	19	20	21	29	16	19
8	17	16	22	28	17	18
9	20	16	22	27	18	16
10	20	17	22	28	16	15
11	19	16	22	29	17	17
12	19	18	20	30	17	17
13			19	28	15	18
14			21	29	19	20
15			21	29	17	18
16			20	29	16	18
17			19	28	17	19
18			20	26	16	19
19			17	27	15	17
			19		16	
Average	19	18	20	26	16	16
Standard Dev	1.53741223	1.906925178	1.663154193	3.166897499	2.064741605	3.314861097
T-Test	0.171295953		5.68982E-08		0.683826647	

Data highlighted in yellow indicates a statistically significant difference at a minimum 95% confidence level

Statistically Distinct Trait	Confidence Level %
Head length	98
Frame diam	99
Leaf Length	99

Leaf length and leaf width numbers are measurements of the useable leafs from one plant.

Trial map #:	RSV02026	**Location:**	Soledad	**Ranch/lot:**	Salmina 2	**Date evald:**	5/7/02
Wet Date:	2/4/02	**Grower:**	Costa/Mann	**Commercial Var:**	El Camino Real	**Eval by:**	dg/ac

	Date Mature	Days to Maturity	Color
Cyclone	5/13/02	98	7.5gy4/6
Darkland	5/7/02	92	5gy4/6

	Core Diameter (mm)		Core Length (mm)		Heart Length (mm)		Head length (mm)		Head length:Core Length		Frame diam (cm)		Head wt. (g)	
Sample #	Darkland	Cyclone	Darkland	Cyclone	Darkland	Cyclone	Darkland	Cyclone	Darkland	Cyclone	Darkland	Cyclone	Darkland	Cyclone
1	36	39	50	60	230	210	270	270	5.4	4.5	41	34	744	847
2	57	55	45	50	180	200	240	250	5.3	5.0	40	37	822	883
3	52	52	50	61	260	220	300	280	6.0	4.6	42	32	1065	777
4	55	37	50	60	220	190	300	270	6.0	4.5	41	37	987	993
5	52	39	55	61	230	200	270	270	4.9	4.4	42	34	955	945
6	40	52	50	62	250	220	300	260	6.0	4.2	40	35	1120	792
7	43	37	40	65	210	210	300	250	7.5	3.8	40	30	741	751
8	42	39	50	55	220	190	270	250	5.4	4.5	41	39	850	957
9	51	39	50	55	230	200	300	260	6.0	4.7	39	38	810	982
10	51	41	45	60	210	210	300	280	6.7	4.7	41	36	1175	1134
11	55	36	50	65	220	210	300	260	6.0	4.0	40	38	923	1036
12	39	55	45	62	200	220	280	270	6.2	4.4	38	35	707	884
Average	47.8	43.4	48.3	59.7	221.7	206.7	285.8	264.2	6.0	4.4	40.4	35.4	908.3	915.1
Stan dev	7.25E+00	7.61E+00	3.89E+00	4.36E+00	2.12E+01	1.07E+01	1.98E+01	1.08E+01	6.79E-01	3.17E-01	1.16E+00	2.64E+00	1.55E+02	1.14E+02
T test	1.67E-01		9.36E-07		4.00E-02		3.03E-03		5.41E-07		4.94E-06		9.03E-01	

	Leaf Count/ Plant		Leaf Length (mm)		Leaf Width (mm)		Leaf Thickness (mm)	
	Darkland	Cyclone	Darkland	Cyclone	Darkland	Cyclone	Darkland	Cyclone
1	35	35	267	231	144	141	0.96	0.95
2	34	32	277	192	182	126	0.89	1.22
3	37	28	260	221	127	136	0.83	0.97
4	37	28	270	245	142	154	0.95	0.99
5	35	26	282	198	158	110	0.93	0.95
6	34	39	260	233	188	182	0.91	0.93
7	33	37	261	218	171	152	0.90	0.95
8	28	35	270	227	111	144	0.85	0.98
9	36	34	277	242	155	180	0.88	0.96
10	36	34	240	243	162	155	0.81	0.82
11	35	32	251	248	167	180	0.84	0.98
12	33	32	283	254	113	187	0.81	0.99
13			280	262	153	177	0.84	0.82
14			275	218	157	141	0.86	0.82
15			265	237	157	152	0.93	0.99
16			258	239	175	180	0.88	0.97
17			255	252	203	178	0.91	1.47
18			240	248	195	159	0.92	1.29
19			270	238	215	162	0.85	0.96
20			275	233	205	160	0.85	0.91
Average	34	33	266	234	164	158	0.88	0.996
Standard Dev	2.429303429	3.84550111	12.67654278	17.79554941	28.87905816	20.94252787	0.04518966	0.158426473
T-Test	1.96E-01		1.11E-07		4.42E-01		3.19E-03	

Indicates that the varieties are significantly different for this trait at at least a 95% confidence level

Statistically Distinct Trait	Confidence Level %
Core Length	99
Heart Length	96
Head length	99
Head length:Core Length	99
Frame diam	99
Leaf Length	99
Leaf Thickness	99

Trial map #:	RSV02049	**Location:**	Salinas	**Ranch/lot:**	12--19	**Date evald:** 5/31/02
Wet Date:	3/10/02	**Grower:**	D'arrigo	**Commercial Va Frontier**		**Eval by:** AC

	Date Mature	ays to Maturity	Color
Cyclone	6/7/02	89	7.5gy4/4
Darkland	6/3/02	85	5gy5/6

	Core Diameter (mm)		Core Length (mm)		Heart Length (mm)		Head length (mm)		Head length:Core Length		Frame diam (cm)		Head wt. (g)	
Sample #	Darkland	Cyclone	Darkland	Cyclone	Darkland	Cyclone	Darkland	Cyclone	Darkland	Cyclone	Darkland	Cyclone	Darkland	Cyclone
1	42	40	49	42	154	165	259	237	5.3	5.6	36	35	1060	925
2	38	36	49	59	170	190	239	262	4.9	4.4	38	32	1186	979
3	34	41	63	47	169	162	244	229	3.9	4.9	37	33	1119	955
4	45	37	57	57	184	182	283	239	5.0	4.2	36	34	1350	1120
5	44	37	67	59	179	179	292	252	4.4	4.3	39	33	1539	875
6	42	36	54	59	184	192	292	269	5.4	4.6	34	32	855	805
7	39	35	49	62	159	205	253	262	5.2	4.2	37	32	928	1040
8	39	40	43	57	157	179	259	239	6.0	4.2	37	34	1031	786
9	40	32	56	39	169	172	266	249	4.8	6.4	37	38	823	995
10	38	45	49	44	167	159	283	237	5.8	5.4	37	33	1005	1013
11	40	40	49	46	172	166	320	224	6.5	4.9	38	34	1420	1156
12	42	42	54	44	159	169	287	205	5.3	4.7	36	34	1270	1286
Average	40.3	38.4	53.3	51.3	168.6	176.7	273.1	242.0	5.2	4.8	36.8	33.7	1132.2	994.6
Stan dev	2.99E+00	3.55E+00	6.76E+00	8.25E+00	1.01E+01	1.39E+01	2.37E+01	1.81E+01	7.18E-01	6.83E-01	1.27E+00	1.67E+00	2.26E+02	1.44E+02
T test	1.85E-01		5.23E-01		1.17E-01		1.54E-03		1.91E-01		3.00E-05		8.97E-02	

	Leaf Count/ Plant		Leaf Length		Leaf Width		Leaf Thickness	
Sample #	Darkland	Cyclone	Darkland	Cyclone	Darkland	Cyclone	Darkland	Cyclone
1	41	24	246	227	171	168	0.70	0.80
2	36	31	210	214	158	192	0.70	0.80
3	37	36	266	220	152	125	0.60	0.80
4	36	31	269	222	160	186	0.80	0.60
5	32	35	264	219	192	177	0.60	0.80
6	38	27	252	235	171	146	0.60	0.50
7	36	35	233	243	168	152	0.60	0.50
8	36	31	246	234	138	144	0.50	0.60
9	38	29	220	238	152	164	0.50	0.70
10	29	36	257	232	157	168	0.40	0.50
11	37	29	247	215	178	136	0.50	0.70
12	36	33	277	204	174	189	0.50	0.50
13			240	223	154	186	0.50	0.60
14			283	219	149	165	0.40	0.50
15			279	225	146	139	0.50	0.50
16			233	214	139	142	0.50	0.50
17			275	239	148	160	0.40	0.50
18			229	209	175	169	0.40	0.60
19			219	228	175	163	0.50	0.80
20			245	238	159	159	0.70	0.80
Average	36	31	250	225	161	162	1	0.630
Standard Dev	3.015113446	3.776923552	21.51009555	10.88166009	14.23709018	18.92227871	0.1145931	0.130182059
T-Test	3.38E-03		5.13E-05		8.96E-01		3.46E-02	

Indicates that the varieties are significantly different for this trait at at least a 95% confidence level

Statistically Distinct Trait	Confidence Level %
Head length	98.5
Frame diam	99
Head Weight	91
Leaf Length	99
Leaf Thickness	96.5

2003054

Whole Leaf Process Data
Data produced by Fresh Leaf Farms, LLC in conjunction with Mann Packing

Process Date	Trays Processed		Total Cartons		**Pack Out %**	
	Cyclone	Frontier	Cyclone	Frontier	**Cyclone**	**Frontier**
15-May	392	828	630	919	**1.61**	**1.11**
3-Aug	707	569	781	600	**1.1**	**1.05**
22-Aug	662	812	955	962	**1.44**	**1.18**
27-Aug	924	868	1091	839	**1.18**	**0.97**
23-Sep	1092	1104	1121	1029	**1.03**	**0.93**
	755.4	836.2	915.6	869.8	**1.272**	**1.048**
	2.67E+02	1.90E+02	2.09E+02	1.66E+02	**2.44E-01**	**1.02E-01**
	5.96E-01		7.11E-01		**4.63E-02**	

This data compares the **pack out** proportion of the lettuce varieties Cyclone and Frontier.
The pack out number is the proportion of total cartons (finished product) generated from a single tray of product. All trays contain 24 harvested romain plants. All finished cartons are 10 pounds of processed and stacked whole leaves of romaine, all of which meet a specific size requirement.

For exanple, based on the May 15 data:

For Cyclone, 1.61 finished 10 pound cartons were produced from a single tray of 24 romaine plants.
For Frontier, 1.11 finished 10 pound cartons were produced from a single tray fo 24 romaine plants.

Based on the 5 compared dates, Cyclone is statistically higher yielding in this patented process at a 95% confidence level.

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Definition of the plant characteristics as measured in our trials:

1. The romaine plant is cut according to fresh market standards, at market maturity. The plant is weighed, the core diameter is measured, and then the plant is sliced vertically.

2. We define the heart as the part of the plant enclosed by the outer most cupping leaf. This area is the densest part of the plant and the color varies from white to yellow to light green as the leafs mature.

3. For our evaluation purposes the heart length is measured from the base of the cut plant stem (core) to the tip of the outer most cupping leaf that forms the heart.

4. The stem length is measured from the base of the cut stem to the stem tip, at market maturity.

5. Head height is measured vertically from the base of the cut stem to the tip of the margin of the longest leaf.

6. Head height differs from plant height. Plant height would be the total plant height of the growing plant from the top of the bed to the highest part of the plant. Head height is a measurement of the plant height once cut to market standards.

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Trialing Protocol for Intellectual Property Protection.

I. Set Up

1. Parental lines and competing varieties are identified.
2. Primary slots are identified.
3. Necessary accession lines are located and purchased/received from seed dealers or growers.
4. All varieties are assigned a number to maintain integrity, and anonymity.
5. Trials are set up in the Progeny warehouse with all necessary varieties. Variety arrangement for trial is diagramed.

II. Planting

1. Commercial plantings are located by contacting commercial growers during the planting slot recommended for the variety.
2. Field is located during commercial planting, and the necessary rows and area is marked off by a Progeny employee with proper training.
3. Varieties are planted according to diagram, in 100 ft. ranges.
4. All varieties are planted in same manner, to mimic the planting of the commercial variety as closely as possible.
5. A trial map is drawn diagramming the trial, the trial location in the field, and directions to the field.

III. Maintenance

1. All varieties are treated identically. The grower handles all watering, fertilization, and pest control, as if it was no different from the commercial field it is grown with.
2. Thinning of the trial is done by a crew contracted by the commercial grower.

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IV. Evaluation

1. Evaluations are done as near to the time of the commercial harvest as possible by knowledgeable Progeny employees.
2. The evaluation is conducted "blindly". The evaluator(s) do not have the key to the trial at the time of evaluation.

3. 24 heads of each variety are evaluated.
    a. The frame diameter of 12 random plants are measured to the nearest cm.
    b. 12 mature heads of each variety are cut to market specs.
    c. The heads are carried to an adequate work station
    d. The following measurements are then conducted and recorded:
        1. Each head is weighed to the nearest gram.
        2. The core diameter of each head is measured to the nearest mm.
        3. The heads are then sliced in to halves, discarding 1 half.
        4. The core lengths (from the cut stem to the core tip) are measured to the nearest mm.
        5. The heart lengths (from the cut stem to the tip of the longest heart leaf) are measured to the nearest mm.
        6. The head length (from the cut stem to the tip of the longest leaf) is measured to the nearest mm.
        7. The ideal maturity or harvest date is then estimated based on the solidity of the head, the core length and any other physiological characteristics present.
        8. The leaf color is documented using the Munsell Color Charts for Plant Tissue.
    e. From these measurements, we then use an Excell program to calculate the averages, the standard deviations and the T-Tests for the compared varieties.

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AGRICULTURAL MARKETING SERVICE

EXHIBIT E
STATEMENT OF THE BASIS OF OWNERSHIP

The following statements are made in accordance with the Privacy Act of 1974 (5 U.S.C. 552a) and the Paperwork Reduction Act (PRA) of 1995.

Application is required in order to determine if a plant variety protection certificate is to be issued (7 U.S.C. 2421). Information is held confidential until certificate is issued (7 U.S.C. 2426).

1. NAME OF APPLICANT(S)

PROGENY ADVANCED GENETICS, INC.

2. TEMPORARY DESIGNATION OR EXPERIMENTAL NUMBER

PX408

3. VARIETY NAME

CYCLONE

4. ADDRESS *(Street and No., or R.F.D. No., City, State, and ZIP, and Country)*

1536 B MOFFETT ST
SALINAS CA 93905

5. TELEPHONE *(include area code)*

831-751-6030

6. FAX *(include area code)*

831-751-6032

7. PVPO NUMBER

200300054

8. Does the applicant own all rights to the variety? *Mark an "X" in appropriate block.* If no, please explain. [X] YES [ ] NO

9. Is the applicant (individual or company) a U.S. national or U.S. based company? [X] YES [ ] NO
If no, give name of country

10. Is the applicant the original owner? [X] YES [ ] NO *If no, please answer one of the following:*

a. If original rights to variety were owned by individual(s), is (are) the original owner(s) a U.S. national(s)?

[ ] YES [ ] NO If no, give name of country

b. If original rights to variety were owned by a company(ies), is(are) the original owner(s) a U.S. based company?

[ ] YES [ ] NO If no, give name of country

11. Additional explanation on ownership *(if needed, use reverse for extra space)*:

PLEASE NOTE:

Plant variety protection can be afforded only to owners (not licensees) who meet one of the following criteria:

1. If the rights to the variety are owned by the original breeder, that person must be a U.S. national, national of a UPOV member country, or national of a country which affords similar protection to nationals of the U.S. for the same genus and species.

2. If the rights to the variety are owned by the company which employed the original breeder(s), the company must be U.S. based, owned by nationals of a UPOV member country, or owned by nationals of a country which affords similar protection to nationals of the U.S. for the same genus and species.

3. If the applicant is an owner who is not the original owner, both the original owner and the applicant must meet one of the above criteria.

The original breeder/owner may be the individual or company who directed final breeding. See Section 41(a)(2) of the Plant Variety Protection Act for definition.